at the close of the first filing window."[3/] On September 15, 1995, the School Board timely filed its Modification Application pursuant to the August 3, 1995 Public Notice.

5. On September 30, 1996, the Commission announced the acceptance for filing of both the School Board Modification Application and the Palm Beach Modification Application.[4/]

6. Although the September 30, 1996 Public Notice plainly reflects a determination by the Commission that the Palm Beach Modification Application had not achieved cut-off status at the time the School Board filed its Modification Application, Palm Beach and WBSA each assert that the School Board's Modification Application and the Palm Beach Modification Application are not mutually exclusive ("MX") because the Palm Beach Modification Application achieved cut-off status prior to September 15, 1995.[5/]

7. Palm Beach asserts that its Modification Application was cut-off as of May 24, 1995, because it was part of a "market settlement" filed on that date with a request for a waiver of the cut-off rules, and because a grant of that waiver would prevent other parties from filing competing applications. Although the Commission never has acted on Palm Beach's waiver request, Palm Beach argues that the waiver should be granted because it "was filed as part of a marketwide settlement involving

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3/ Public Notice, Report No. 23564A, released August 3, 1995 (emphasis added).

4/ Public Notice, Report No. 23836C, released September 30, 1996.

5/ Palm Beach Petition at 4-7; WBSA Petition at 5-12.

27 ITFS and MMDS channels" pursuant to the Commission's policy on waivers of the cut-off rules,[6/] which provides:

> The cut-off rules pertaining to major change proposals may be waived in situations where the proposals are filed to accommodate settlement agreements between applicants that have achieved cut-off status and the settlement resolves mutually exclusive proposals.[7/]

8. Palm Beach's Modification Application was not cut-off as of May 24, 1995. Footnote 47 plainly applies only where parties resolve MX applications that have achieved cut-off status. The settlement did not involve Palm Beach's Modification Application, but an application for a different station. Palm Beach's Modification Application had not even been filed, let alone achieved cut-off status, when Palm Beach reached a settlement with a competing applicant involving its D Group channels. Moreover, the settlement in fact "resolve[d] the mutually exclusive proposals" only of Palm Beach and FAU, while purporting to resolve applications that were not MX, including Palm Beach's KZB-29 Modification Application.

9. Palm Beach's transparent attempt to bootstrap a settlement involving two applicants and one channel group to encompass "27 ITFS and MMDS channels"[8/] cannot be credited.[9/] Footnote 47 is patently inapplicable to the Palm

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6/ Palm Beach Petition at 1.

7/ Instructional Television Fixed Service, MM Docket No. 83-523, Memorandum Opinion and Order on Reconsideration, 59 RR 2d 1355, 1365 n.47 (1986) ("Footnote 47").

8/ Palm Beach Petition at 1.

9/ The School Board notes that the proposed settlement has been challenged by other parties on grounds that it is inconsistent with the policy established by Footnote 47 even as to the stations directly involved in the settlement. As a (continued...)

Beach Modification Application. Because the Palm Beach Modification Application was not cut-off, it was subject to competing applications and to the September 15, 1995 cut-off date established by the Commission's August 4, 1995 Public Notice.

10. In sum, waiver of the cut-off rules would be both procedurally improper and would unfairly prejudice the efforts of the School Board and its partners to bring the benefits of wireless cable to the Miami area -- a result that would be patently inconsistent with the public interest.

**B. The July 7, 1995 Cut-Off Date Established by the KTB-84 Application Does Not Affect the School Board's KTB-85 Modification Application**

11. According to Palm Beach and WBSA, even assuming Palm Beach's application was not cut-off as of May 24, 1995, the KTB-85 Modification Application was untimely filed. They assert that the Commission established a July 7, 1995 cut-off date with respect to the School Board's application to modify ITFS station KTB-84 (File No. BMPLIF-950407DG), that the Palm Beach Modification Application was filed prior to that cut-off date, and that the Palm Beach Modification Application and the KTB-84 proposal are MX.[10/]

12. Palm Beach's and WBSA's conclusion that the KTB-84 and KZB-29 modification proposals are MX is based on an erroneous engineering analysis, which is appended to the WBSA Petition. That analysis attempts to demonstrate that the changes proposed for KZB-29 do not meet the required adjacent-channel protection for one of KTB-84's proposed receive site ("R1"). As set forth in the

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9/(...continued)
result, Palm Beach's applications to modify its various stations more properly should be considered applications for new facilities.

10/ See Palm Beach Petition at 8; WBSA Petition at 8-12.

attached Engineering Statement of Darryl K. DeLawder, however, no adjacent-channel interference to R1 will exist. See Exhibit 1. Consequently, the School Board's KTB-84 modification application is not MX with the Palm Beach Modification Application for KZB-29, and the July 7, 1995 cut-off date with respect to the KTB-84 application has no bearing on the KTB-85 Modification Application.

### III. The Assurances of No Interference to KTZ-22 Remain In Effect

13. The School Board's Modification Application included a letter, signed by Joseph J. Ceros-Livingston in his capacity as Director of the Instructional Television Center for the School Board of Broward County, Florida ("Broward"), and dated September 14, 1995, which stated that Broward, the licensee of ITFS Station KTZ-22, had received assurances from the School Board that it "will take whatever steps may become necessary to prevent or correct any interference to the receive sites" for KTZ-22.[11/] Consequently, the letter continues, Broward "has no objection to" the School Board's Modification Application.

14. WBSA asserts that "the Commission should reject the letter as not representing the affected station's licensee."[12/] WBSA provides absolutely no support for this assertion. WBSA's claims regarding the authority of Mr. Ceros-

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11/ A copy of the letter appears at Exhibit F to the WBSA Petition.

12/ WBSA Petition at 12.

Livingston are wholly conjectural and WBSA lacks standing to make such claims on behalf of Broward.[13/]

15. Although WBSA lacks standing to raise any potential defect in the consent granted by Broward, it is certainly worth nothing that WBSA's argument cannot be squared with the facts. While WBSA contends that Dr. Ceros-Livingston lacked authority to grant Broward's consent to the proposed modification of KTB-85, Dr. Ceros-Livingston certainly had apparent authority to bind Broward. For example, the consent letter itself is written on the letterhead of the Broward County Public Schools.

16. In any event, the School Board has never retreated from its promise to take whatever steps may be necessary to correct any interference to KTZ-22's receive sites. To that end, the School Board and Broward are actively engaged in efforts to resolve possible interference to KTZ-22. As is demonstrated by the Engineering Statement annexed as Exhibit 1, it is certainly possible for all of Broward's 189 receive antennas to be upgraded so as to eliminate potential interference. Thus, WBSA is simply wrong when it contends that the resulting interference would be "extensive" or "severe." Not surprisingly, WBSA's analysis totally ignores the possibility of antenna upgrades by Broward. Indeed, given that

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13/ Broward also filed a Petition to Deny the School Board's Modification Application. Broward has consented to an extension of time for the School Board to respond to that Petition, pending the completion of discussions between the parties to address Broward's concerns.

Broward's receive sites all can be upgraded pursuant to Section 74.903(a)(4) of the Rules, Broward's consent is unnecessary to a grant of the instant application.[14/]

## IV. Attacks on the Reinstatement of the KTB-85 License Are Untimely

17. By letter dated December 11, 1995 (Commission Reference 1800E3-MAE), the Acting Chief of the Distribution Services Branch (the "Staff") granted the School Board's Petition for Reconsideration of the cancellation of the KTB-85 license, reinstated the KTB-85 license, and accepted for filing the School Board's application for renewal of the license for KTB-85.

18. In their Petitions, Palm Beach and WBSA attack the Staff's processing of the KTB-85 renewal application and resort to ad hominem attacks on the Commission's exercise of authority.[15/] Such attacks are untimely and unwarranted. The public was provided notice of the decision to accept the KTB-85 renewal application in October 1995. Public Notice, Report No. 23622, released October 27, 1995. Palm Beach and WBSA did not object in a timely manner to the decision to process the application.

19. Most importantly, the public interest will be served by reinstatement of the KTB-85 license and grant of the KTB-85 Modification Application. It is contemplated that the proposed multi-station ITFS/wireless cable

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14/ Because the School Board can protect all of Broward's receive sites for KTZ-22 to 45 dB D/U, there is no merit to WBSA's unsubstantiated assertion that the School Board's request for digital operating authority is flawed for failure to meet the 45 dB standard. See WBSA Petition at 16.

15/ See, e.g., WBSA Petition at 4.

system in South Florida -- including KTB-85 -- will serve the needs of students enrolled not only in the Dade County Public Schools, but also at Barry University, Florida International University, Miami-Dade County Community College, and the Broward County Public Schools with a variety of educational and instructional offerings. As the Commission is aware, South Florida may be unique among the major metropolitan areas of the country in that the student universe includes significant elements fluent in only one of three separate languages: English, French, or Spanish. Accordingly, the consortium of which the School Board is a member has a greater need for channel capacity for educational and instructional programming than might be the case in other metropolitan areas.

20. In addition, the wireless cable portion of the ITFS/wireless cable system provides crucial financial support to the development of the system. For every subscriber to the wireless cable system, the educational consortium receives One Dollar ($1.00) in financial support, and to date has received $750,000 from its wireless cable partner toward the development of the system, which -- once in operation on all of the ITFS/MDS channel groups -- will provide meaningful competition to the local wired cable system, an objective toward which many of the Commission's current Rules and policies aspire.

## V. The School Board's Request for Digital Authorization Is Not Defective

21. The School Board's Modification Application includes a request for authorization to utilize either analog or digital transmission, at the School Board's discretion. Amendment, Exhibit E-7.

22. On July 10, 1996, the Commission issued a Declaratory Ruling and Order in which it granted a request, filed in July 1995 by 99 parties with interests in the wireless cable industry, for a ruling that the Commission's Rules permit the use of digital transmissions by MDS and ITFS stations.[16/] The Commission held that existing provisions of the Commission's rules "allow[] sufficient latitude for authorization of digital transmissions over MDS and ITFS stations," and granted certain waivers requests associated with the Petition for Declaratory Ruling.[17/] The Commission required that pending applications, such as the School Board's, must be amended to specify a digital emission designator.[18/]

23. WBSA ignores the clear guidance offered by Commission in the Digital Ruling with respect to pending applications, and asserts that the KTB-85 Modification Application is defective and should be dismissed because it was filed prior to the Commission's adoption of the Digital Ruling and therefore was "totally unauthorized".[19/] The Digital Ruling clearly contemplated the filing of amendments by applicants with pending requests for digital authorization.[20/] Indeed, the request granted by the Commission specifically sought permission to

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16/ In the Matter of Request for Declaratory Ruling on the Use of Digital Modulation by Multipoint Distribution Service and Instructional Fixed Service Stations, DA-1854, released July 10, 1996 ("Digital Ruling").

17/ Id. at para. 9.

18/ Id. at para. 53.

19/ WBSA Petition at pp. 16-17.

20/ See Digital Ruling, at paras. 52, 53; n.34.

amend pending applications.[21/] Notably, WBSA was one of the petitioners and joined in that request.[22/] On January 30, 1997, WBSA's affiliate itself filed an amendment to Palm Beach's Modification Application for KZB-29, seeking authority to utilize digital transmissions. Notably, that amendment does not afford 45 Db D/U interference to the proposed KTB-85 facilities. In fact, the Engineering Statement appended to the amendment states that KTB-85 "must accept any interference that may occur" because the Modification Application "was filed after the KZB-29 application." This conclusion prejudges Palm Beach's request for waiver of the cut-off rules; as shown herein, there is no basis for granting such a waiver to Palm Beach.

24. In sum, as demonstrated by the interference analysis accompanying the Modification Application, the proposed KTB-85 station does not have an unobstructed electrical path to any of the receive sites of currently authorized KZB-29. The interference analysis also clearly states that "[t]his application is mutually-exclusive with the application to move the KZB-29 transmitter site to Boynton Beach." While implementation of the School Board's proposal would cause the D/U ratio within the proposed protected service area of the modified KZB-29 to exceed 45 dB, that is of no moment. As discussed above, the Modification Application was a timely filed application that is MX with the KZB-29 modification proposal. The fact that the School Board is proposing to operate with digital modulation in no manner changes the Commission's cut-off rules or otherwise obligates the School

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21/ See id. at n.65.

22/ See Digital Ruling, Appendix A.

Board to protect the proposed modifications to KZB-29 before the application proposing those modifications had been cut-off from competing applications.

## VI. Conclusion

WHEREFORE, the foregoing premises having been duly considered, the School Board of Dade County, Florida respectfully requests that the Commission deny the Petition to Dismiss or Deny filed by Wireless Broadcasting Systems of America, Inc. and the Petition to Dismiss or Deny filed by the School District of Palm Beach County, Florida, and move expeditiously to grant the School Board's Modification Application.

Respectfully submitted,

**THE SCHOOL BOARD OF DADE COUNTY, FLORIDA**

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Its Attorney

February 21, 1997

82796.1

# EXHIBIT 1

# ENGINEERING REPORT

DELAWDER COMMUNICATIONS, INC. (703) 658-5390

Miami, Florida (KTB-85)
Support of Response to Petition to Dismiss or Deny

ENGINEERING STATEMENT

1. This Engineering Statement supports a response to a petition to dismiss or deny the modification application of the School Board of Dade County, Florida ("Dade") (FCC File Number BMPLIF-950915HW) filed by The School Board of Palm Beach County, Florida (the "Board") and Wireless Broadcasting Systems of America, Inc. ("WBS"). The Dade application proposes to modify KTB-85, its ITFS F-Group station at Miami, Florida. The Board and WBS (collectively referred to as "Board/WBS") are, respectively, the permittee and lessee of excess air time of ITFS G-Group station KZB-29 at West Palm Beach, Florida. The Board has on file with the Commission an application (FCC File Number BMPLIF-950524DM) to move the transmitter site approximately 17.7 miles to Boynton Beach, Florida.

2. Additionally, a study is included which demonstrates that adequate cochannel protection from the proposed facilities of BMPLIF-950915HW can be achieved to KTZ-22 (ITFS G-Group at Fort Lauderdale, Florida) by upgrading 78 of KTZ-22's 189 registered receive sites[1].

BMPLIF-950524DM is not Mutually-exclusive with BMPLIF-950407DG (A Modification to Move the Transmitter Site of KTB-84 to Fort Lauderdale, Florida)

3. The Board/WBS contends that the KZB-29 transmit facilities proposed in BMPLIF-950524DM are mutually-exclusive with the facilities of KTB-84 as also proposed by Dade (a site-move to Fort Lauderdale, Florida; FCC File Number BMPLIF-950407DG); and since BMPLIF-950407DG was cutoff on July 7, 1995, the KTB-85 modification application by Dade is untimely. The Board/WBS supports this contention by demonstrating that the required adjacent-channel protection ratio (0 dB D/U ratio) is not met to proposed KTB-84 receive site R1 by the adjacent-

[1] Since an interference consent agreement from KTZ-22 was included in BMPLIF-950915HW, an interference study to KTZ-22 is not required. Dade has requested that this statement include a KTZ-22 interference and antenna upgrade study.

channel transmit facilities of BMPLIF-950524DM. It is herein demonstrated that the Board/WBS interference study is flawed; and that the proposed KTB-84 receive site R1 is adequately protected to a D/U ratio above the required 0 dB level.

4. The KTB-84 receive site R1 receive antenna is to be mounted at the same site as the proposed adjacent-channel KZB-29 transmit antenna at Boynton Beach. The R1 receive antenna will be mounted at 45 feet above ground level, as specified in BMPLIF-950407DG. The proposed KZB-29 transmit antenna radiation centerline height (as amended) is 305 feet AGL. The ComSpec engineering declaration supporting the Board/WBS petition indicates that for its calculations "...WTB-84 {sic} receive site R1 is presumed to be mounted below the {proposed} KZB-29 transmitting antenna". ComSpec must incorrectly assume that the KTB-84 receive site R1 receive antenna is mounted directly below the propose KZB-29 receive antenna. In fact, ComSpec's calculations are only valid if **no signal loss from the proposed KZB-29 transmit antenna and the proposed KTB-84 receive site R1 receive antenna were to exist due to the separation between the two antennas. Due to the proposed separation between the two antennas of 260 feet and the corresponding signal loss from the KZB-29 transmit antenna due to this separation, the ComSpec interference calculation which does not acount for this separation signal loss is flawed.**

5. Table 1, attached, are D/U ratio studies comparing the incorrect ComSpec study (-37.51 dB D/U ratio) with the corrected study (+41.37 dB D/U ratio). Due to the difference between the ComSpec and corrected calculated free space loss (fsl) which exists between the proposed KZB-29 transmit antenna and the KTB-84 receive site R1 receive antenna, ComSpec has incorrectly determined that adjacent-channel interference to the KTB-84 receive site R1 will exist. As demonstrated by the corrected study of Table 1, the KTB-84 receive site R1 is adequately protected from adjacent-channel interference from the proposed KZB-29 station.

Miami, Florida (KTB-85)
Support of Response to Petition to Dismiss or Deny

Similar Adjacent-channel Protection Between Authorized WHR-877 (Boca Raton, Florida A1-A4) and Authorized WHR-896 (Boynton Beach, Florida B1-B4)

6. It is not at all uncommon for adequate adjacent-channel protection to result to a receive antenna mounted on the same structure as an adjacent-channel transmit antenna with an appropriate amount of separation between the transmit and receive antennas. An ITFS relay station which is receiving an incoming signal and then transmitting on an adjacent channel is a typical example. Interestingly, we need to look no further than the authorized Boynton Beach station WHR-896 (ITFS channel A-1 to A-4), which is also leasing excess channel capacity to WBS, for an example. The authorized WHR-896 transmit antenna (radiation centerline height at 396' AGL) is mounted on the same tower as the authorized WHR-877 receive site RT-1 (operating on adjacent-channels B-1 through B-4, with a radiation centerline height of 217' AGL). The separation between the authorized WHR-896 transmit antenna and the authorized WHR-877 RT-1 receive antenna is 179 feet.

7. Table 2, attached, includes interference studies of WHR-877 RT-1 from the authorized WHR-896 station, comparing the D/U ratio values using the incorrect ComSpec method and the corrected method. As demonstrated by Table 2, the ComSpec method predicts interference (-32,50 dB D/U ratio), whereas, the corrected method predicts adequate protection (+42.76 dB D/U ratio).

8. The application supporting the authorized for WHR-896 station (FCC File Number BPLIF-920814DB) indicates that the receive antenna of WHR-877 will be mounted at 370' AGL (instead of 217' AGL as specified in the WHR-877 application). At 370' AGL, **the WHR-896 transmit antenna and the WHR-877 RT-1 receive antenna are separated by only 26 feet!** Even with this small amount of separation between the antennas, BPLIF-920814DB indicates that the receive antenna of WHR-877 will be mounted "such that interference will not be received from the B channel transmitting antenna".

Miami, Florida (KTB-85)
Support of Response to Petition to Dismiss or Deny

Cochannel Protection to KTZ-22

9. 47 C. F. R. Section 74.903(a)(1) specifies that harmful cochannel interference is considered present when the desired-to-undesired (hereafter "D/U") ratio is less than 45 dB at the output of the reference receive antenna orientated to receive the maximum desired signal. Using the specified receive antenna or reference receive antenna of 47 C. F. R. Section 74.937, Table 3, attached, demonstrates predicted cochannel interference from the modified KTB-85 facility to 78 of the 189 KTZ-22 receive sites. Except for two receive sites, the D/U ratio values are predicted to be above 30 dB.

10. One of the new Conifer flat-panel receive antennas (model # QD-2127) can be used to upgrade 69 of the 78 interfered-with receive sites of KTZ-22 in order to meet the required 45 dB D/U ratio level. (These receive sites are identified with "CON" in the code section of Table 3.) Conifer's specification sheet for the QD-2127 receive antenna indicates that better than 40 dB of cross-polarization signal rejection is realized on the nose of this antenna, and at least 50 dB of front-to-back cross-polarization signal rejection is achieved. From the specification sheet data we were able to conclude that the QD-2127 receive antenna can be used to meet the cochannel protection requirements to these 69 receive sites.

11. Since the Conifer QD-2127 has a gain of only 16 dBi, in many instances the replacement of the specified higher-gain receive antenna with the Conifer antenna will result in less desired signal at the KTZ-22 receive site. However, since KTZ-22 operates at 50 watts (and 28 dBw EIRP) and all such receive sites are located within 17 miles of the KTZ-22 transmitter site, the Conifer QD-2127 should provide acceptable service to each upgraded receive site even with the lower 16 dBi antenna gain. In most instances the KTZ-22 receive sites specify much larger receive antennas than required for service. The cost of the Conifer antenna is less than $100.00.

12. The other nine KTZ-22 receive sites which require antenna upgrades have also been upgraded to meet a 45 dB D/U ratio, as shown in TABLE 4.MARK.UPGRADES. The Mark P25A96G (8' parabolic grid) and the Mark P25A72 (6' parabolic solid) antennas used as upgrades have listed retail costs (per antenna) of $3,000.00 and $2,000.00, respectively.

13. The estimated cost to purchase and install the 78 upgrade antennas is approximately $50,000.00.

14. Except for the Conifer QD-2127 receive antenna, the antenna patterns for the receive antennas indentified for KTZ-22 are attached as Figures PAT.1 through PAT.8.

**TABLE 1 : D/U STUDY OF PROPOSED KTB-84 RECEIVE SITE R-1**

Desired Station (D) : Proposed KTB-84 (BMPLIF-950407DG)
Undesired Station (U) : Proposed KZB-29 (BMPLIF-950524DM)

Protected Rec. Site : KTB-84 R1 (Palm Beach County ITV Ctr.)
Coords: N26° 31′ 22"; W80° 05′ 29"
Rad. centerline height : 40′ AGL (55′ AMSL)
Receive Antenna Type : Lance 2572 (6′ Parabolic)
Distance from :
Proposed KTB-84 Trans. Antenna : 31.38 miles
**Proposed KZB-29 Trans. Antenna : 0.049 miles (260 feet)**
**(This represents the vertical plane distance between the transmit antenna at 305′ AGL and receive antenna at 45′ AGL at the same geographical coordinate location.)**

| | INCORRECT COMSPEC STUDY | | CORRECTED STUDY |
|---|---|---|---|
| Desired Station (V-Pol, Omni, Andrew HMD16VO-W) | dB, dBw | | dB, dBw |
| Max. EIRP (dBw) : | 27.99 | | 27.99 |
| Trans. Rel. Field, Rel. dB : | | | |
| H-Plane : 1.000 | 0.00 | 1.000 | 0.00 |
| V-Plane : 1.000 | 0.00 | 1.000[1] | 0.00[1] |
| Free Space Loss (dB): | -134.91 | | -134.91 |
| Rec. Antenna Gain (dBi): | 30.1 | | 30.1 [1] |
| Receive Signal Level (dBw): | -76.82 | | -76.82 |
| Undesired Station (H-Pol, Omni, Andrew HMD16HO) | dB, dBw | | dB, dBw |
| Max. EIRP (dBw) : | 27.59 | | 27.59 |
| Trans. Rel. Field, Rel. dB : | | | |
| H-Plane : 1.000 | 0.00 | 1.000 | 0.00 |
| V-Plane : 0.001 | -60.00 | 0.001 | -60.00 |
| Free Space Loss (dB): | 0.00 | | **-78.88** |
| Rec. Antenna Gain (dBi): | -6.9 | | -6.9 [1] |
| Receive Signal Level (dBw): | -39.31 | | **-118.19** |
| D/U Ratio (dB): | -37.51 | | **+41.37** |

[1] We have determined a value that is slightly different; but the difference is insignificant or irrelevant. The WBSA value is, therefore, not being disputed.

**TABLE 2 : D/U STUDY OF AUTHORIZED WHR-877 RECEIVE SITE RT-1**

Desired Station (D) : Authorized WHR-877 (Boca Raton A1-A4)
Undesired Station (U) : Authorized WHR-896 (Boynton Beach B1-B4)

Protected Rec. Site : WHR-877 RT-1 (Palm Beach County ITV Ctr.)
Coords: N26° 31' 22"; W80° 05' 29"
Rad. centerline height : 217' AGL[1] (232' AMSL)
Receive Antenna Type : Andrew 49001A (2' Parabolic)
Distance from :
Authorized WHR-877 Trans. Antenna : 10.48 miles
**Authorized WHR-896 Trans. Antenna : 0.034 miles (179 feet)**
**(This represents the vertical plane distance between the transmit antenna at 396' AGL and receive antenna at 217' AGL at the same geographical coordinate location.)**

| | STUDY USING INCORRECT COMSPEC METHOD | | STUDY USING CORRECTED METHOD | |
|---|---|---|---|---|
| Desired Station (V-Pol, Parabolic, Andrew GP6-25A) | | dB, dBw | | dB, dBw |
| Max. EIRP (dBw) : | | 23.10 | | 23.10 |
| Trans. Rel. Field, Rel. dB : | | | | |
| H-Plane : | 1.000 | 0.00 | 1.000 | 0.00 |
| V-Plane : | 1.000 | 0.00 | 1.000 | 0.00 |
| Free Space Loss (dB): | | -125.04 | | -125.04 |
| Rec. Antenna Gain (dBi): | | 21.7 | | 21.7 |
| Receive Signal Level (dBw): | | -80.24 | | -80.24 |
| Undesired Station (H-Pol, Omni, Andrew HMD16HO) | | dB, dBw | | dB, dBw |
| Max. EIRP (dBw) : | | 20.56 | | 20.56 |
| Trans. Rel. Field, Rel. dB : | | | | |
| H-Plane : | 1.000 | 0.00 | 1.000 | 0.00 |
| V-Plane : | 0.001 | -60.00 | 0.001 | -60.00 |
| Free Space Loss (dB): | | 0.00 | | **-75.26** |
| Rec. Antenna Gain (dBi): | | -8.3 | | -8.3 |
| Receive Signal Level (dBw): | | -47.74 | | **-123.00** |
| D/U Ratio (dB): | | -32.50 | | **+42.76** |

[1] The authorized WHR-896 application (BPLIF-920814DB) actually indicates that the WHR-877 RT-1 receive site antenna will be mounted at 370' AGL - **only 26' below the WHR-896 transmit antenna!** For the purpose of this study the lower height of 217' AGL height (as specified in the WHR-877 application) is used.

| DESIRED STATION: | UNDESIRED STATION: |
|---|---|
| KTZ-22, Fort Lauderdale, FL (CP) | KTB-85, Miami, Fl (Mod.) |
| G1-G4 | G1-G4 |
| TX SITE: N26- 5- 9.0; W 80-14- 8.0 | TX SITE: N25-46-20.0; W 80-11-20.0 |
| ANT. TYPE: Andrew HMD16VO (OMNI) | ANT. TYPE: Andrew HMD16HW-W (@ 295.0T) |
| POLARIZATION: VERTICAL | POLARIZATION: HORIZONTAL |
| OUTPUT POWER (dBm): 46.99 | OUTPUT POWER (dBm): 46.99 |
| SYSTEM LOSSES (dB): 3.00 | SYSTEM LOSSES (dB): 2.00 |
| MAX ANT. GAIN(dBi): 14.00 | MAX ANT. GAIN(dBi): 16.30 |
| MAX EIRP (dBm): 57.99 | MAX EIRP (dBm): 61.29 |

| RE | SITE IDENTIFICATION | N LATITUDE | W LONGITUDE | REC ANTENNA TYPE | AMSL-FT |
|---|---|---|---|---|---|
| R1 | Tropical Elementary | 26- 6-10.0 | 80-14- 7.0 | REF | none |
| R2 | James S. Hunt Elementary | 26-16-23.0 | 80-13-52.0 | REF | none |
| R3 | Riverglades Elementary | 26-19-17.0 | 80-13-45.0 | MARK P25A72G | none |
| R4 | Silver Lakes Middle | 26-12-50.0 | 80-13-37.0 | MARK P25A48 | none |
| R5 | North Lauderdale Elementary | 26-12-59.0 | 80-13-35.0 | MARK P25A24 | none |
| R6 | Morrow Elementary | 26-13-37.0 | 80-13-31.0 | ANDREW P4F-25D | none |
| R7 | Coral Springs High School | 26-16-23.0 | 80-13-14.0 | ANDREW P4F-25D | none |
| R8 | Forest Glen Middle School | 26-17- 8.0 | 80-12-53.0 | MARK P25A48G | none |
| R9 | Atlantic West Elementary | 26-14- 0.0 | 80-13- 0.0 | MARK P25A24 | none |
| R10 | Park Springs Elementary | 26-17-30.0 | 80-12-36.0 | MARK P25A72G | none |
| R11 | Margate Elementary | 26-15- 2.0 | 80-12-37.0 | MARK P25A24 | none |
| R12 | Royal Palm Elementary | 26- 9- 3.0 | 80-13-32.0 | REF | none |
| R13 | Margate Middle | 26-14-10.0 | 80-12-42.0 | MARK P25A24 | none |
| R14 | Telecable of Broward | 26-18-40.0 | 80-11-37.0 | MARK P25A72G | none |
| R15 | Broadview Elementary | 26-12-17.0 | 80-12-25.0 | MARK P25A24 | none |

D/U RATIO STUDIES

| REC SITE | FROM DESIRED Dist mi | Azim deg T | EIRP dBmW | FSL dB | FROM UNDESIRED Dist mi | Azim deg T | EIRP dBmW | FSL dB | RECEIVER ANGLE deg | DISCR dB | D/U RATIO dB | C* O D E |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| R1 Tropi | 1.2 | 1.0 | 58.0 | 106.5 | 23.0 | 352.8 | 61.2 | 132.4 | 8.2 | -24.0 | 46.6 | |
| R2 James | 12.9 | 1.2 | 58.0 | 127.3 | 34.7 | 355.7 | 61.3 | 135.9 | 5.6 | -21.5 | 26.7 | CON |
| R3 River | 16.3 | 1.4 | 58.0 | 129.3 | 38.0 | 356.2 | 61.3 | 136.7 | 5.2 | -35.0 | 39.1 | CON |
| R4 Silve | 8.9 | 3.5 | 58.0 | 124.1 | 30.6 | 355.6 | 61.3 | 134.8 | 7.9 | -30.0 | 37.5 | CON |
| R5 North | 9.0 | 3.6 | 58.0 | 124.2 | 30.8 | 355.7 | 61.3 | 134.9 | 8.0 | -30.0 | 37.4 | CON |
| R6 Morro | 9.8 | 3.7 | 58.0 | 124.9 | 31.5 | 355.9 | 61.3 | 135.1 | 7.9 | -35.0 | 41.9 | CON |
| R7 Coral | 13.0 | 4.1 | 58.0 | 127.4 | 34.6 | 356.8 | 61.3 | 135.9 | 7.4 | -35.0 | 40.2 | CON |
| R8 Fores | 13.9 | 5.3 | 58.0 | 127.9 | 35.5 | 357.4 | 61.3 | 136.1 | 7.9 | -33.0 | 37.9 | CON |
| R9 Atlan | 10.3 | 6.6 | 58.0 | 125.3 | 31.9 | 356.9 | 61.3 | 135.2 | 9.7 | -30.0 | 36.6 | CON |
| R10 Park | 14.3 | 6.4 | 58.0 | 128.2 | 35.9 | 357.9 | 61.3 | 136.2 | 8.5 | -35.0 | 39.7 | CON |
| R11 Marg | 11.5 | 7.8 | 58.0 | 126.3 | 33.1 | 357.7 | 61.3 | 135.5 | 10.2 | -30.0 | 35.9 | CON |
| R12 Roya | 4.5 | 7.9 | 58.0 | 118.2 | 26.2 | 355.0 | 61.3 | 133.5 | 12.9 | -30.1 | 42.1 | CON |
| R13 Marg | 10.5 | 8.1 | 58.0 | 125.5 | 32.1 | 357.5 | 61.3 | 135.2 | 10.7 | -30.0 | 36.4 | CON |
| R14 Tele | 15.8 | 9.5 | 58.0 | 129.1 | 37.2 | 359.5 | 61.3 | 136.5 | 9.9 | -35.0 | 39.2 | MAR |
| R15 Broa | 8.4 | 12.2 | 58.0 | 123.6 | 29.9 | 357.9 | 61.3 | 134.6 | 14.4 | -30.0 | 37.7 | CON |

* - CODES AND NOTES PROVIDED ON EXHIBIT EE-CODES

| DESIRED STATION: | UNDESIRED STATION: |
|---|---|
| KTZ-22, Fort Lauderdale, FL (CP) | KTB-85, Miami, Fl (Mod.) |
| G1-G4 | G1-G4 |
| TX SITE: N26- 5- 9.0; W 80-14- 8.0 | TX SITE: N25-46-20.0; W 80-11-20.0 |
| ANT. TYPE: Andrew HMD16VO (OMNI) | ANT. TYPE: Andrew HMD16HW-W (@ 295.0T) |
| POLARIZATION: VERTICAL | POLARIZATION: HORIZONTAL |
| OUTPUT POWER (dBm): 46.99 | OUTPUT POWER (dBm): 46.99 |
| SYSTEM LOSSES (dB): 3.00 | SYSTEM LOSSES (dB): 2.00 |
| MAX ANT. GAIN(dBi): 14.00 | MAX ANT. GAIN(dBi): 16.30 |
| MAX EIRP (dBm): 57.99 | MAX EIRP (dBm): 61.29 |

| RE | SITE IDENTIFICATION | N LATITUDE | W LONGITUDE | REC ANTENNA TYPE | AMSL-FT |
|---|---|---|---|---|---|
| R16 | Semiole Middle | 26- 6- 6.0 | 80-13-55.0 | REF | none |
| R17 | Winston Park Elementary | 26-17-44.0 | 80-11- 1.0 | MARK P25A48G | none |
| R18 | Atlantic Vocational Center | 26-14-34.0 | 80-11-33.0 | REF | none |
| R19 | Lauderhill Middle | 26- 8-56.0 | 80-13- 1.0 | REF | none |
| R20 | Coconut Creek High | 26-14-47.0 | 80-11- 2.0 | REF | none |
| R21 | Castle Hill Elementary | 26- 9-33.0 | 80-12-42.0 | MARK P25A24 | none |
| R22 | Quiet Water Elementary | 26-19- 1.0 | 80- 9-23.0 | MARK P25A48G | none |
| R23 | Coconut Creek Elementary | 26-14-13.0 | 80-11- 1.0 | MARK P25A24 | none |
| R24 | Lauderhill P.T. Elementary | 26- 8-36.0 | 80-12-53.0 | MARK P25A24 | none |
| R25 | Charles Drew Elementary | 26-14-31.0 | 80- 9-43.0 | MARK P25A24 | none |
| R26 | Cross Creek School | 26-14-33.0 | 80- 9-40.0 | MARK P25A48G | none |
| R27 | Cypress Run Alt. Center | 26-15-11.0 | 80- 9-10.0 | REF | none |
| R28 | Charles Drew Resource | 26-14-25.0 | 80- 9-25.0 | MARK P25A24 | none |
| R29 | Deerfield Beach High | 26-17-45.0 | 80- 7- 5.0 | MARK P25A72G | none |
| R30 | Boyd H. Anderson High | 26-10-36.0 | 80-11- 5.0 | MARK P25A48 | none |

D/U RATIO STUDIES

| REC SITE | FROM DESIRED Dist mi | Azim deg T | EIRP dBmW | FSL dB | FROM UNDESIRED Dist mi | Azim deg T | EIRP dBmW | FSL dB | RECEIVER ANGLE deg | DISCR dB | D/U RATIO dB | C* O D E |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| R16 Semi | 1.1 | 11.6 | 58.0 | 106.1 | 22.9 | 353.3 | 61.2 | 132.3 | 18.3 | -36.0 | 59.0 | |
| R17 Wins | 14.8 | 12.5 | 58.0 | 128.5 | 36.1 | 0.5 | 61.3 | 136.3 | 12.0 | -35.5 | 40.0 | CON |
| R18 Atla | 11.2 | 13.8 | 58.0 | 126.1 | 32.5 | 359.6 | 61.3 | 135.4 | 14.2 | -33.9 | 39.9 | CON |
| R19 Laud | 4.5 | 14.8 | 58.0 | 118.2 | 26.1 | 356.2 | 61.3 | 133.4 | 18.7 | -36.0 | 48.0 | |
| R20 Coco | 11.5 | 16.1 | 58.0 | 126.4 | 32.7 | 0.5 | 61.3 | 135.4 | 15.6 | -36.0 | 41.8 | CON |
| R21 Cast | 5.3 | 16.3 | 58.0 | 119.6 | 26.8 | 357.0 | 61.3 | 133.7 | 19.3 | -30.0 | 40.8 | CON |
| R22 Quie | 16.7 | 17.1 | 58.0 | 129.6 | 37.7 | 3.1 | 61.2 | 136.6 | 14.0 | -38.0 | 41.8 | MAR |
| R23 Coco | 10.9 | 17.1 | 58.0 | 125.9 | 32.1 | 0.6 | 61.3 | 135.2 | 16.6 | -30.0 | 36.1 | CON |
| R24 Laud | 4.2 | 18.0 | 58.0 | 117.5 | 25.7 | 356.4 | 61.3 | 133.3 | 21.6 | -30.1 | 42.6 | CON |
| R25 Char | 11.7 | 22.9 | 58.0 | 126.5 | 32.5 | 2.9 | 61.2 | 135.3 | 20.0 | -30.0 | 35.6 | CON |
| R26 Cros | 11.8 | 23.1 | 58.0 | 126.5 | 32.5 | 3.0 | 61.2 | 135.4 | 20.1 | -38.1 | 43.7 | CON |
| R27 Cypr | 12.6 | 23.9 | 58.0 | 127.1 | 33.3 | 3.9 | 61.2 | 135.6 | 20.1 | -36.0 | 41.2 | CON |
| R28 Char | 11.7 | 24.5 | 58.0 | 126.5 | 32.4 | 3.5 | 61.2 | 135.3 | 21.1 | -30.0 | 35.6 | CON |
| R29 Deer | 16.2 | 26.6 | 58.0 | 129.3 | 36.4 | 6.9 | 61.1 | 136.3 | 19.7 | -35.0 | 38.9 | MAR |
| R30 Boyd | 7.0 | 26.7 | 58.0 | 122.0 | 27.9 | 0.5 | 61.3 | 134.0 | 26.2 | -40.8 | 49.5 | |

* - CODES AND NOTES PROVIDED ON EXHIBIT EE-CODES

| DESIRED STATION: | UNDESIRED STATION: |
|---|---|
| KTZ-22, Fort Lauderdale, FL (CP) | KTB-85, Miami, Fl (Mod.) |
| G1-G4 | G1-G4 |
| TX SITE: N26- 5- 9.0; W 80-14- 8.0 | TX SITE: N25-46-20.0; W 80-11-20.0 |
| ANT. TYPE: Andrew HMD16VO (OMNI) | ANT. TYPE: Andrew HMD16HW-W (@ 295.0T) |
| POLARIZATION: VERTICAL | POLARIZATION: HORIZONTAL |
| OUTPUT POWER (dBm): 46.99 | OUTPUT POWER (dBm): 46.99 |
| SYSTEM LOSSES (dB): 3.00 | SYSTEM LOSSES (dB): 2.00 |
| MAX ANT. GAIN(dBi): 14.00 | MAX ANT. GAIN(dBi): 16.30 |
| MAX EIRP (dBm): 57.99 | MAX EIRP (dBm): 61.29 |

| REC | SITE IDENTIFICATION | N LATITUDE | W LONGITUDE | REC ANTENNA TYPE | AMSL-FT |
|---|---|---|---|---|---|
| R31 | Oriole Elementary | 26-10-27.0 | 80-11- 8.0 | MARK P25A48G | none |
| R32 | Tedder Elementary | 26-16-44.0 | 80- 7-27.0 | MARK P25A72G | none |
| R33 | Deerfield Park Elementary | 26-18-31.0 | 80- 6-24.0 | ANDREW P4F-25 | none |
| R34 | Plantation Park Elementary | 26- 6-32.0 | 80-13-20.0 | MARK P25A48G | none |
| R35 | Bright Horizons Center | 26-16-33.0 | 80- 7-26.0 | ANDREW P2F-25A | none |
| R36 | Lauderdale Lakes Middle | 26-10-26.0 | 80-11- 2.0 | MARK P25A48 | none |
| R37 | Deerfield Beach Elementary | 26-19-10.0 | 80- 5-44.0 | MARK P25A48 | none |
| R38 | Park Ridge Elementary | 26-17-44.0 | 80- 6-31.0 | REF | none |
| R39 | Robert C. Markham Elementa | 26-14-41.0 | 80- 8-16.0 | REF | none |
| R40 | Deefield Beach Middle | 26-18-29.0 | 80- 8-52.0 | MARK P25A72G | none |
| R41 | Crystal Lake Middle | 26-16-21.0 | 80- 7- 7.0 | MARK P25A48G | none |
| R42 | Palmview Elementary | 26-15-46.0 | 80- 7-27.0 | MARK P25A24 | none |
| R43 | Sanders Park Elementary | 26-14-52.0 | 80- 8- 0.0 | MARK P25A72G | none |
| R44 | Ely High | 26-14-27.0 | 80- 8- 3.0 | MARK P25A48G | none |
| R45 | Plantation Elementary | 26- 7-25.0 | 80-12-39.0 | MARK P25A24 | none |

D/U RATIO STUDIES

| REC SITE | FROM DESIRED Dist mi | Azim deg T | EIRP dBmW | FSL dB | FROM UNDESIRED Dist mi | Azim deg T | EIRP dBmW | FSL dB | RECEIVER ANGLE deg | DISCR dB | D/U RATIO dB | C* O D E |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| R31 Orio | 6.8 | 26.9 | 58.0 | 121.8 | 27.8 | 0.4 | 61.3 | 134.0 | 26.5 | -42.0 | 50.9 | |
| R32 Tedd | 15.0 | 27.3 | 58.0 | 128.6 | 35.2 | 6.5 | 61.1 | 136.1 | 20.8 | -35.0 | 39.3 | MAR |
| R33 Deer | 17.3 | 27.4 | 58.0 | 129.9 | 37.4 | 7.8 | 61.1 | 136.6 | 19.6 | -35.0 | 38.6 | MAR |
| R34 Plan | 1.8 | 27.4 | 58.0 | 110.2 | 23.3 | 354.9 | 61.3 | 132.5 | 32.5 | -42.0 | 61.0 | |
| R35 Brig | 14.8 | 27.8 | 58.0 | 128.5 | 35.0 | 6.6 | 61.1 | 136.0 | 21.2 | -32.0 | 36.3 | CON |
| R36 Laud | 6.9 | 27.8 | 58.0 | 121.9 | 27.7 | 0.6 | 61.3 | 134.0 | 27.1 | -40.9 | 49.7 | |
| R37 Deer | 18.3 | 28.2 | 58.0 | 130.4 | 38.2 | 8.7 | 61.0 | 136.8 | 19.6 | -40.4 | 43.8 | MAR |
| R38 Park | 16.5 | 28.5 | 58.0 | 129.5 | 36.5 | 7.8 | 61.1 | 136.4 | 20.7 | -36.0 | 39.8 | MAR |
| R39 Robe | 12.5 | 28.9 | 58.0 | 127.1 | 32.8 | 5.5 | 61.1 | 135.4 | 23.4 | -36.0 | 41.2 | CON |
| R40 Deef | 16.3 | 19.5 | 58.0 | 129.3 | 37.1 | 3.9 | 61.2 | 136.5 | 15.6 | -35.0 | 38.9 | MAR |
| R41 Crys | 14.8 | 29.3 | 58.0 | 128.5 | 34.8 | 7.2 | 61.1 | 136.0 | 22.2 | -40.2 | 44.5 | MAR |
| R42 Palm | 14.0 | 29.4 | 58.0 | 128.1 | 34.1 | 6.7 | 61.1 | 135.8 | 22.7 | -30.4 | 35.0 | CON |
| R43 Sand | 12.9 | 29.5 | 58.0 | 127.3 | 33.0 | 6.0 | 61.1 | 135.5 | 23.5 | -35.0 | 40.1 | CON |
| R44 Ely | 12.4 | 30.4 | 58.0 | 127.0 | 32.5 | 6.0 | 61.1 | 135.4 | 24.4 | -42.0 | 47.2 | |
| R45 Plan | 3.0 | 30.4 | 58.0 | 114.7 | 24.3 | 356.8 | 61.3 | 132.8 | 33.7 | -32.9 | 47.7 | |

* - CODES AND NOTES PROVIDED ON EXHIBIT EE-CODES

| DESIRED STATION: | UNDESIRED STATION: |
|---|---|
| KTZ-22, Fort Lauderdale, FL (CP) | KTB-85, Miami, Fl (Mod.) |
| G1-G4 | G1-G4 |
| TX SITE: N26- 5- 9.0; W 80-14- 8.0 | TX SITE: N25-46-20.0; W 80-11-20.0 |
| ANT. TYPE: Andrew HMD16VO (OMNI) | ANT. TYPE: Andrew HMD16HW-W (@ 295.0T) |
| POLARIZATION: VERTICAL | POLARIZATION: HORIZONTAL |
| OUTPUT POWER (dBm): 46.99 | OUTPUT POWER (dBm): 46.99 |
| SYSTEM LOSSES (dB): 3.00 | SYSTEM LOSSES (dB): 2.00 |
| MAX ANT. GAIN(dBi): 14.00 | MAX ANT. GAIN(dBi): 16.30 |
| MAX EIRP (dBm): 57.99 | MAX EIRP (dBm): 61.29 |

| REC | SITE IDENTIFICATION | N LATITUDE | W LONGITUDE | REC ANTENNA TYPE | AMSL-FT |
|---|---|---|---|---|---|
| R46 | Continental Cable Co. | 26-14-59.0 | 80- 7-28.0 | MARK P25A48 | none |
| R47 | Cresthaven Elementary | 26-15-45.0 | 80- 6-49.0 | MARK P25A48G | none |
| R48 | Norcrest Elementary | 26-16-48.0 | 80- 6- 4.0 | MARK P25A48G | none |
| R49 | Pompano Beach Middle | 26-14- 9.0 | 80- 7-13.0 | MARK P25A24 | none |
| R50 | Cypress Elementary | 26-13- 9.0 | 80- 7-45.0 | MARK P25A72G | none |
| R51 | Wingate Oaks Center | 26- 8-22.0 | 80-11-33.0 | MARK P25A48G | none |
| R52 | Pompano Beach Elementary | 26-14-18.0 | 80- 6-32.0 | MARK P25A48G | none |
| R53 | Pompano Multi-Purpose Ctr. | 26-14-11.0 | 80- 6-38.0 | MARK P25A24 | none |
| R54 | North Andrews Gardens Elem | 26-11-47.0 | 80- 8-34.0 | MARK P25A24 | none |
| R55 | Martin L. King Elementary | 26- 9-31.0 | 80-10-26.0 | MARK P25A48 | none |
| R56 | Oakland Park Elementary | 26- 8-22.0 | 80-11-23.0 | MARK P25A48G | none |
| R57 | Wilton Manors Elementary | 26- 9-21.0 | 80-10-32.0 | MARK P25A72G | none |
| R58 | Lauderdale Manors Elementa | 26-12- 5.0 | 80- 8- 1.0 | MARK P25A72G | none |
| R59 | Al (New School) | 26-11-41.0 | 80- 8-17.0 | MARK P25A48G | none |
| R60 | Sunland Park Elementary | 26- 6-10.0 | 80-13-13.0 | MARK P25A24 | none |

D/U RATIO STUDIES

| REC SITE | FROM DESIRED Dist mi | Azim deg T | EIRP dBmW | FSL dB | FROM UNDESIRED Dist mi | Azim deg T | EIRP dBmW | FSL dB | RECEIVER ANGLE deg | DISCR dB | D/U RATIO dB | C* O D E |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| R46 Cont | 13.2 | 31.3 | 58.0 | 127.6 | 33.2 | 6.9 | 61.1 | 135.5 | 24.4 | -40.7 | 45.6 | |
| R47 Cres | 14.4 | 31.8 | 58.0 | 128.3 | 34.2 | 7.8 | 61.1 | 135.8 | 23.9 | -41.9 | 46.4 | |
| R48 Norc | 15.8 | 31.8 | 58.0 | 129.1 | 35.5 | 8.8 | 61.0 | 136.1 | 23.0 | -41.0 | 45.1 | |
| R49 Pomp | 12.6 | 34.6 | 58.0 | 127.1 | 32.3 | 7.6 | 61.1 | 135.3 | 27.0 | -31.4 | 36.5 | CON |
| R50 Cypr | 11.3 | 35.6 | 58.0 | 126.2 | 31.1 | 6.8 | 61.1 | 135.0 | 28.8 | -36.4 | 42.0 | CON |
| R51 Wing | 4.6 | 35.8 | 58.0 | 118.3 | 25.4 | 359.5 | 61.3 | 133.2 | 36.3 | -42.0 | 53.6 | |
| R52 Pomp | 13.1 | 36.7 | 58.0 | 127.5 | 32.6 | 8.8 | 61.0 | 135.4 | 27.9 | -42.0 | 46.9 | |
| R53 Pomp | 13.0 | 36.7 | 58.0 | 127.4 | 32.4 | 8.6 | 61.0 | 135.3 | 28.1 | -31.6 | 36.6 | CON |
| R54 Nort | 9.6 | 37.0 | 58.0 | 124.7 | 29.4 | 5.6 | 61.1 | 134.5 | 31.4 | -32.4 | 39.0 | CON |
| R55 Mart | 6.3 | 37.2 | 58.0 | 121.1 | 26.7 | 2.0 | 61.2 | 133.6 | 35.3 | -41.4 | 50.6 | |
| R56 Oakl | 4.7 | 37.5 | 58.0 | 118.5 | 25.4 | 359.9 | 61.3 | 133.2 | 37.6 | -42.0 | 53.4 | |
| R57 Wilt | 6.1 | 37.6 | 58.0 | 120.8 | 26.5 | 1.8 | 61.2 | 133.6 | 35.8 | -42.0 | 51.5 | |
| R58 Laud | 10.2 | 38.4 | 58.0 | 125.3 | 29.8 | 6.6 | 61.1 | 134.6 | 31.8 | -41.6 | 47.8 | |
| R59 Al ( | 9.6 | 38.8 | 58.0 | 124.8 | 29.3 | 6.2 | 61.1 | 134.5 | 32.6 | -42.0 | 48.5 | |
| R60 Sunl | 1.5 | 39.0 | 58.0 | 108.7 | 22.9 | 355.1 | 61.3 | 132.3 | 43.9 | -35.2 | 55.6 | |

* - CODES AND NOTES PROVIDED ON EXHIBIT EE-CODES

TABLE 3 (PAGE 5 OF 13)

| DESIRED STATION: | UNDESIRED STATION: |
|---|---|
| KTZ-22, Fort Lauderdale, FL (CP) | KTB-85, Miami, Fl (Mod.) |
| G1-G4 | G1-G4 |
| TX SITE: N26- 5- 9.0; W 80-14- 8.0 | TX SITE: N25-46-20.0; W 80-11-20.0 |
| ANT. TYPE: Andrew HMD16VO (OMNI) | ANT. TYPE: Andrew HMD16HW-W (@ 295.0T) |
| POLARIZATION: VERTICAL | POLARIZATION: HORIZONTAL |
| OUTPUT POWER (dBm): 46.99 | OUTPUT POWER (dBm): 46.99 |
| SYSTEM LOSSES (dB): 3.00 | SYSTEM LOSSES (dB): 2.00 |
| MAX ANT. GAIN(dBi): 14.00 | MAX ANT. GAIN(dBi): 16.30 |
| MAX EIRP (dBm): 57.99 | MAX EIRP (dBm): 61.29 |

| REC | SITE IDENTIFICATION | N LATITUDE | W LONGITUDE | REC ANTENNA TYPE | AMSL-FT |
|---|---|---|---|---|---|
| R61 | Fort Lauderdale High | 26-10-35.0 | 80- 9- 9.0 | MARK P25A48 | none |
| R62 | Pine Ridge Center | 26- 7-37.0 | 80-11-43.0 | MARK P25A48G | none |
| R63 | Bennett Elementary | 26-12-50.0 | 80- 6-31.0 | MARK P25A48G | none |
| R64 | Sunrise Middle | 26-11-31.0 | 80- 7-46.0 | MARK P25A48 | none |
| R65 | North Fork Elementary | 26- 8-17.0 | 80-10-34.0 | MARK P25A48G | none |
| R66 | Walker Elementary | 26- 8-23.0 | 80-10-27.0 | MARK P25A48G | none |
| R67 | Westwood Heights Elementar | 26- 7-40.0 | 80-11-16.0 | MARK P25A48G | none |
| R68 | Bayview Elementary | 26-10- 4.0 | 80- 8- 7.0 | MARK P25A48 | none |
| R69 | School Board Administratio | 26- 9-26.0 | 80- 8-38.0 | MARK P25A48 | none |
| R70 | Meadowbrook Elementary | 26- 8-33.0 | 80- 9-42.0 | MARK P25A48 | none |
| R71 | Stranahan High | 26- 8-28.0 | 80- 9-14.0 | MARK P25A48G | none |
| R72 | Riverland Elementary | 26- 8- 8.0 | 80- 9-36.0 | MARK P25A48G | none |
| R73 | Sunset Learning Center | 26- 8-53.0 | 80- 8-23.0 | MARK P25A72G | none |
| R74 | Virginia Young Elementary | 26- 6-18.0 | 80-12-11.0 | MARK P25A24 | none |
| R75 | K.C. Wright Administration | 26- 8-40.0 | 80- 7-26.0 | MARK P25A72G | none |

D/U RATIO STUDIES

| REC SITE | FROM DESIRED Dist mi | Azim deg T | EIRP dBmW | FSL dB | FROM UNDESIRED Dist mi | Azim deg T | EIRP dBmW | FSL dB | RECEIVER ANGLE deg | DISCR dB | D/U RATIO dB | C* O D E |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| R61 Fort | 8.1 | 39.5 | 58.0 | 123.3 | 28.0 | 4.6 | 61.2 | 134.1 | 34.9 | -41.3 | 48.9 | |
| R62 Pine | 3.8 | 41.3 | 58.0 | 116.7 | 24.5 | 359.1 | 61.3 | 132.9 | 42.3 | -42.0 | 54.9 | |
| R63 Benn | 11.8 | 41.6 | 58.0 | 126.6 | 30.9 | 9.3 | 61.0 | 134.9 | 32.4 | -42.0 | 47.3 | |
| R64 Sunr | 9.8 | 41.9 | 58.0 | 125.0 | 29.2 | 7.2 | 61.1 | 134.4 | 34.7 | -41.3 | 47.7 | |
| R65 Nort | 5.2 | 45.6 | 58.0 | 119.4 | 25.3 | 1.8 | 61.2 | 133.2 | 43.8 | -42.0 | 52.5 | |
| R66 Walk | 5.3 | 45.6 | 58.0 | 119.6 | 25.4 | 2.1 | 61.2 | 133.2 | 43.6 | -42.0 | 52.3 | |
| R67 West | 4.1 | 45.6 | 58.0 | 117.5 | 24.6 | 0.2 | 61.3 | 132.9 | 45.5 | -42.0 | 54.2 | |
| R68 Bayv | 8.4 | 47.7 | 58.0 | 123.6 | 27.5 | 6.9 | 61.1 | 133.9 | 40.8 | -41.7 | 48.9 | |
| R69 Scho | 7.5 | 49.0 | 58.0 | 122.6 | 26.7 | 6.0 | 61.1 | 133.7 | 43.1 | -41.8 | 49.7 | |
| R70 Mead | 6.0 | 49.5 | 58.0 | 120.7 | 25.6 | 3.8 | 61.2 | 133.3 | 45.7 | -42.0 | 51.3 | |
| R71 Stra | 6.3 | 53.0 | 58.0 | 121.2 | 25.6 | 4.9 | 61.2 | 133.3 | 48.1 | -42.0 | 50.9 | |
| R72 Rive | 5.8 | 53.7 | 58.0 | 120.4 | 25.2 | 4.1 | 61.2 | 133.1 | 49.7 | -42.0 | 51.5 | |
| R73 Suns | 7.3 | 54.1 | 58.0 | 122.4 | 26.1 | 6.7 | 61.1 | 133.5 | 47.4 | -42.0 | 49.9 | |
| R74 Virg | 2.4 | 56.7 | 58.0 | 112.8 | 23.0 | 357.8 | 61.3 | 132.3 | 58.9 | -38.0 | 54.3 | |
| R75 K.C. | 8.0 | 59.7 | 58.0 | 123.2 | 26.0 | 8.9 | 61.0 | 133.4 | 50.8 | -42.0 | 49.2 | |

* - CODES AND NOTES PROVIDED ON EXHIBIT EE-CODES

| DESIRED STATION: | UNDESIRED STATION: |
|---|---|
| KTZ-22, Fort Lauderdale, FL (CP) | KTB-85, Miami, Fl (Mod.) |
| G1-G4 | G1-G4 |
| TX SITE: N26- 5- 9.0; W 80-14- 8.0 | TX SITE: N25-46-20.0; W 80-11-20.0 |
| ANT. TYPE: Andrew HMD16VO (OMNI) | ANT. TYPE: Andrew HMD16HW-W (@ 295.0T) |
| POLARIZATION: VERTICAL | POLARIZATION: HORIZONTAL |
| OUTPUT POWER (dBm): 46.99 | OUTPUT POWER (dBm): 46.99 |
| SYSTEM LOSSES (dB): 3.00 | SYSTEM LOSSES (dB): 2.00 |
| MAX ANT. GAIN(dBi): 14.00 | MAX ANT. GAIN(dBi): 16.30 |
| MAX EIRP (dBm): 57.99 | MAX EIRP (dBm): 61.29 |

| REC | SITE IDENTIFICATION | N LATITUDE | W LONGITUDE | REC ANTENNA TYPE | AMSL-FT |
|---|---|---|---|---|---|
| R76 | Selkirk Communications Cab | 26- 8-36.0 | 80- 7-23.0 | MARK P25A72G | none |
| R77 | Vocational Center | 26- 7-22.0 | 80- 9-44.0 | MARK P25A48G | none |
| R78 | Stephen Foster Elementary | 26- 7-33.0 | 80- 9-19.0 | MARK P25A48G | none |
| R79 | Rock Island Elementary | 26- 6-40.0 | 80-10-55.0 | MARK P25A24 | none |
| R80 | Larkdale Elementary | 26- 8-26.0 | 80- 7- 4.0 | MARK P25A72 | none |
| R81 | Everglades Middle | 26- 7-16.0 | 80- 9-35.0 | MARK P25A72G | none |
| R82 | Rickards Middle School | 26- 5-45.0 | 80-12-38.0 | REF | none |
| R83 | Northeast High | 26- 6-46.0 | 80- 9-59.0 | ANDREW P4F-25 | none |
| R84 | South Plantation High | 26- 6-32.0 | 80-10-33.0 | MARK P25A48G | none |
| R85 | Lloyd Estates Elementary | 26- 6- 2.0 | 80-11-51.0 | ANDREW P2F-25A | none |
| R86 | Parkway Middle | 26- 7-21.0 | 80- 7-59.0 | MARK P25A48G | none |
| R87 | McNab Elementary | 26- 6-51.0 | 80- 8-24.0 | MARK P25A48G | none |
| R88 | Floranada Elementary | 26- 6-47.0 | 80- 8-33.0 | MARK P25A48 | none |
| R89 | Dillard High | 26- 6-43.0 | 80- 8-39.0 | MARK P25A48 | none |
| R90 | Dillard Elementary | 26- 5-40.0 | 80-11-32.0 | MARK P25A24 | none |

D/U RATIO STUDIES

| REC SITE | FROM DESIRED Dist mi | Azim deg T | EIRP dBmW | FSL dB | FROM UNDESIRED Dist mi | Azim deg T | EIRP dBmW | FSL dB | RECEIVER ANGLE deg | DISCR dB | D/U RATIO dB | C* O D E |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| R76 Selk | 8.0 | 60.3 | 58.0 | 123.2 | 26.0 | 9.0 | 61.0 | 133.4 | 51.3 | -42.0 | 49.2 | |
| R77 Voca | 5.2 | 60.7 | 58.0 | 119.5 | 24.3 | 3.9 | 61.2 | 132.8 | 56.8 | -42.0 | 52.1 | |
| R78 Step | 5.7 | 61.0 | 58.0 | 120.2 | 24.5 | 4.9 | 61.2 | 132.9 | 56.1 | -42.0 | 51.5 | |
| R79 Rock | 3.8 | 62.3 | 58.0 | 116.6 | 23.4 | 1.1 | 61.3 | 132.5 | 61.3 | -38.0 | 50.6 | |
| R80 Lark | 8.2 | 62.6 | 58.0 | 123.4 | 25.8 | 9.8 | 60.9 | 133.4 | 52.8 | -50.0 | 57.0 | |
| R81 Ever | 5.3 | 62.6 | 58.0 | 119.6 | 24.2 | 4.3 | 61.2 | 132.8 | 58.3 | -42.0 | 52.0 | |
| R82 Rick | 1.7 | 66.0 | 58.0 | 109.7 | 22.4 | 356.6 | 61.3 | 132.1 | 69.4 | -36.0 | 55.1 | |
| R83 Nort | 4.7 | 66.5 | 58.0 | 118.5 | 23.6 | 3.4 | 61.2 | 132.6 | 63.2 | -35.0 | 45.8 | |
| R84 Sout | 4.0 | 66.7 | 58.0 | 117.2 | 23.3 | 2.0 | 61.2 | 132.4 | 64.8 | -42.0 | 54.0 | |
| R85 Lloy | 2.6 | 66.7 | 58.0 | 113.3 | 22.7 | 358.7 | 61.3 | 132.2 | 68.1 | -32.0 | 47.6 | |
| R86 Park | 6.8 | 68.3 | 58.0 | 121.8 | 24.4 | 8.1 | 61.0 | 132.9 | 60.1 | -42.0 | 50.0 | |
| R87 McNa | 6.2 | 71.7 | 58.0 | 121.0 | 23.8 | 7.3 | 61.1 | 132.6 | 64.4 | -42.0 | 50.5 | |
| R88 Flor | 6.1 | 71.9 | 58.0 | 120.8 | 23.7 | 7.0 | 61.1 | 132.6 | 65.0 | -44.3 | 53.0 | |
| R89 Dill | 5.9 | 72.3 | 58.0 | 120.6 | 23.6 | 6.7 | 61.1 | 132.6 | 65.6 | -44.4 | 53.3 | |
| R90 Dill | 2.8 | 77.5 | 58.0 | 113.9 | 22.3 | 359.5 | 61.3 | 132.1 | 78.1 | -38.0 | 52.9 | |

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|---|---|
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| G1-G4 | G1-G4 |
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| ANT. TYPE: Andrew HMD16VO (OMNI) | ANT. TYPE: Andrew HMD16HW-W (@ 295.0T) |
| POLARIZATION: VERTICAL | POLARIZATION: HORIZONTAL |
| OUTPUT POWER (dBm): 46.99 | OUTPUT POWER (dBm): 46.99 |
| SYSTEM LOSSES (dB): 3.00 | SYSTEM LOSSES (dB): 2.00 |
| MAX ANT. GAIN(dBi): 14.00 | MAX ANT. GAIN(dBi): 16.30 |
| MAX EIRP (dBm): 57.99 | MAX EIRP (dBm): 61.29 |

| REC | SITE IDENTIFICATION | N LATITUDE | W LONGITUDE | REC ANTENNA TYPE | AMSL-FT |
|---|---|---|---|---|---|
| R91 | Harbordale Elementary | 26- 6- 9.0 | 80- 8- 2.0 | MARK P25A48 | none |
| R92 | Crosissant Park Elementary | 26- 5-53.0 | 80- 8-45.0 | MARK P25A48G | none |
| R93 | New River Middle | 26- 5-28.0 | 80-11-13.0 | ANDREW P2F-25A | none |
| R94 | Rogers Middle | 26- 5-24.0 | 80- 9- 2.0 | MARK P25A48 | none |
| R95 | Edgewood Elementary | 26- 5- 2.0 | 80- 9-30.0 | MARK P25A72G | none |
| R96 | McFatter Voc-Tech Center | 26- 5- 6.0 | 80-13-50.0 | REF | none |
| R97 | Collins Elementary | 26- 3-21.0 | 80- 9- 4.0 | MARK P25A48G | none |
| R98 | Dania Elementary | 26- 2-47.0 | 80- 8-35.0 | REF | none |
| R99 | Olsen Middle | 26- 2-11.0 | 80- 8-19.0 | MARK P25A48G | none |
| R100 | Bethune Elementary | 26- 2-39.0 | 80- 8-17.0 | REF | none |
| R101 | Attucks Middle | 26- 2-31.0 | 80- 9-11.0 | MARK P25A24 | none |
| R102 | South Broward High | 26- 1-41.0 | 80- 8-35.0 | MARK P25A72G | none |
| R103 | Hollywood Central Element | 26- 0-26.0 | 80- 8-32.0 | MARK P25A72G | none |
| R104 | Oakridge Elementary | 26- 1-25.0 | 80- 9-46.0 | REF | none |
| R105 | Hollywood Hills High | 26- 2-43.0 | 80-11-52.0 | MARK P25A48G | none |

D/U RATIO STUDIES

| REC SITE | FROM DESIRED Dist mi | Azim deg T | EIRP dBmW | FSL dB | FROM UNDESIRED Dist mi | Azim deg T | EIRP dBmW | FSL dB | RECEIVER ANGLE deg | DISCR dB | D/U RATIO dB | C* O D E |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| R91 Harb | 6.4 | 79.6 | 58.0 | 121.3 | 23.1 | 8.5 | 61.0 | 132.4 | 71.1 | -45.1 | 53.2 | |
| R92 Cros | 5.6 | 81.4 | 58.0 | 120.1 | 22.7 | 6.8 | 61.1 | 132.2 | 74.6 | -42.0 | 51.0 | |
| R93 New | 3.0 | 83.1 | 58.0 | 114.8 | 22.0 | 0.3 | 61.3 | 132.0 | 82.8 | -32.0 | 45.9 | |
| R94 Roge | 5.3 | 86.9 | 58.0 | 119.6 | 22.1 | 6.2 | 61.1 | 132.0 | 80.7 | -46.0 | 55.3 | |
| R95 Edge | 4.8 | 91.6 | 58.0 | 118.7 | 21.6 | 5.0 | 61.2 | 131.8 | 86.6 | -42.0 | 51.9 | |
| R96 McFa | 0.3 | 100.5 | 58.0 | 95.1 | 21.8 | 353.2 | 61.2 | 131.9 | 107.3 | -39.5 | 73.0 | |
| R97 Coll | 5.6 | 111.6 | 58.0 | 120.1 | 19.7 | 6.8 | 61.1 | 131.0 | 104.8 | -42.0 | 49.8 | |
| R98 Dani | 6.4 | 115.4 | 58.0 | 121.2 | 19.1 | 8.5 | 61.0 | 130.8 | 106.9 | -39.4 | 45.9 | |
| R99 Olse | 6.9 | 119.6 | 58.0 | 121.9 | 18.5 | 9.7 | 61.0 | 130.5 | 109.9 | -42.0 | 47.6 | |
| R100 Bet | 6.7 | 115.4 | 58.0 | 121.6 | 19.0 | 9.5 | 61.0 | 130.7 | 105.9 | -39.3 | 45.4 | |
| R101 Att | 5.9 | 120.6 | 58.0 | 120.6 | 18.8 | 6.8 | 61.1 | 130.6 | 113.8 | -38.0 | 44.9 | CON |
| R102 Sou | 7.0 | 124.8 | 58.0 | 122.0 | 17.9 | 9.1 | 61.0 | 130.2 | 115.7 | -42.0 | 47.2 | |
| R103 Hol | 7.9 | 133.1 | 58.0 | 123.1 | 16.5 | 10.1 | 60.9 | 129.5 | 123.0 | -42.0 | 45.4 | |
| R104 Oak | 6.2 | 133.6 | 58.0 | 121.0 | 17.4 | 5.3 | 61.2 | 129.9 | 128.3 | -42.3 | 48.1 | |
| R105 Hol | 3.7 | 140.1 | 58.0 | 116.4 | 18.9 | 358.3 | 61.3 | 130.6 | 141.8 | -39.0 | 50.0 | |

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